



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,259	09/11/2003	Mototsugu Ono	1560-0398P	3537

2292 7590 05/24/2006

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

CONLEY, SEAN EVERETT

ART UNIT	PAPER NUMBER
----------	--------------

1744

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,259

Applicant(s)

ONO, MOTOTSUGU

Examiner

Sean E. Conley

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed March 17, 2006 has been received and considered for examination. Claims 1-4 remain pending.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (U.S. Patent No. 6,043,287) in view of Baier (U.S. Patent No. 2,191,553).

Regarding claim 1, Nakamura ('287) discloses a sterilizing and disinfecting apparatus for spraying a sterilizing and disinfecting chemical including alcohol into a target space, comprising: a spray gun (15) having an end nozzle; chemical container (14) containing the chemical, attached to said spray gun (15); a gas cylinder (10) filled with a compressed carbon dioxide gas as a carrier gas; a heater (12) with a pressure adjuster (13) in the discharge line (11) of gas cylinder (10) to warm the liquefied carbon dioxide and control the pressure to form a carbon dioxide gas; and a gas line directly connected to the spray gun, whereby the chemical is sprayed into the target space by a function of the carrier gas injected from the end nozzle (see figure 1; col. 3, line 65 to col. 4, line 30). Nakamura ('287) fails to teach a pressure reducing valve, attached near

Art Unit: 1744

an outlet of the gas cylinder, for decompressing the gas discharge from the outlet to a predetermined pressure, and a gas hose directly connected to the pressure reducing valve and the spray gun.

Baier discloses an apparatus for treating fruit and vegetables for the purpose of protecting them against decay organisms (see col. 1, lines 1-7). The apparatus includes a gas cylinder (10) containing carbon dioxide gas with the cylinder having a pressure reducing valve (11) for reducing the gas pressure to a predetermined pressure that provides sufficient movement of the CO₂ through the system. After leaving the valve (11) the CO₂ gas passes through coil (12) into vessel (22) where it is mixed with trimethyl borate that is vaporized by the CO₂ gas. The mixture is then ejected through jet (25) into treatment chamber (27) containing the fruit and vegetables to be treated (see col. 1, lines 40 to col. 3, line 25). This reference has been relied upon to teach that it is well known to use a pressure reducing valve connected to a gas cylinder filled with compressed carbon dioxide gas in order to control the pressure and expansion of the liquefied carbon dioxide as it becomes a carbon dioxide gas once it leaves the cylinder.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nakamura ('287) and replace the means for expanding the liquefied carbon dioxide to form a carbon dioxide gas (a heater (12) with a pressure adjuster (13) in the discharge line (11) of gas cylinder (10), see figure 1 of Nakamura ('287)) with a pressure reducing valve attached near the outlet of the gas cylinder for decompressing the gas discharged as taught by Baier in order to provide a more simple design that is cheaper to make, more portable, and achieves the

same result of providing a carbon dioxide gas at a predetermined pressure from a compressed gas cylinder.

Furthermore, Nakamura ('287) in view of Baier fail to specifically teach a spray gun, end nozzle, and gas hose that are set to have dimensions that permit a feed rate of the gas that does not cause the carbon dioxide gas to freeze due to decompressing in the pressure reducing valve during continuous spray for at least 15 minutes. However, modifying the dimensions would have been obvious at the time the applicant's invention because of the legal precedent established by prior case law In re Aller, 105 USPQ 233 (CCPA 1955) which states that the use of optimum and workable ranges discovered by routine experimentation is ordinarily within the skill of the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the optimum dimensions of the spray gun, nozzle, and gas hose through routine experimentation in order to achieve a system that does not cause the carbon dioxide gas to freeze due to decompressing in the pressure reducing valve during continuous spray for at least 15 minutes.

Regarding claim 4, Nakamura ('287) discloses that disinfectant composition tank (14) is connected to the spray gun (15) (see col. 4, lines 23-25; figure 1). Furthermore, multiple examples are disclosed with different disinfectant solutions for tank (14). Therefore, it is obvious that the disinfectant solution tank (14) is detachably attached to spray gun (15) in order to refill the tank (14) or replace tank (14) with other tanks containing different disinfectant solutions such as those disclosed in examples 1-3 (see col. 3, line 65 to col. 6, line 15).

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (U.S. Patent No. 6,043,287) in view of Baier as applied to claim 1 above, and further in view of Organo (Japanese Utility Model Application Laid-Open No. 06-024760).

Regarding claim 2, Nakamura ('287) in view of Baier fail to teach an apparatus that is mounted on a common truck. Organo discloses a portable disinfectant spray apparatus comprising: a hand truck for mounting a gas cylinder filled with a gas that does not cause contamination and a disinfectant chemical tank thereon having attached a spray gun for dispensing the liquid disinfectant (see figure 1, paragraph [0005]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nakamura ('287) in view of Baier and mount the apparatus on a common truck as taught by the apparatus of Organo in order to make the device portable and easier to move from one location to another.

Regarding claim 3, Nakamura ('287) discloses that disinfectant composition tank (14) is connected to the spray gun (15) (see col. 4, lines 23-25; figure 1). Furthermore, multiple examples are disclosed with different disinfectant solutions for tank (14). Therefore, it is obvious that the disinfectant solution tank (14) is detachably attached to spray gun (15) in order to refill the tank (14) or replace tank (14) with other tanks containing different disinfectant solutions such as those disclosed in examples 1-3 (see col. 3, line 65 to col. 6, line 15).

Response to Arguments

5. Applicant's arguments, see pages 4-5, filed March 17, 2006, with respect to the rejection(s) of claim(s) 1-4 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nakamura (U.S. Patent No. 6,043,287) and Baier (U.S. Patent no. 2,191,553).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Conley whose telephone number is 571-272-8414. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEC

May 18, 2006


KRISANNE JASTRZAB
PRIMARY EXAMINER